
Cross-Site BCC Research Ideas Proposed for Supplemental Funding
Exploring the role of Environmental Influences on Regular Physical Activity

1. **Statement of primary research question (3-5 sentences):**

Faced with the growing epidemic of inactive behavior patterns in the U.S. and other industrialized nations, the importance of understanding the factors contributing to physical activity spanning all levels of impact have been recently recognized. While the majority of investigations of relevant physical activity-related influences have occurred primarily at the personal/interpersonal levels of analysis, the potentially important role of the physical and social environments in influencing daily levels of physical activity has been increasingly emphasized. The primary aim of the proposed work is to investigate environmental correlates of physical activity across diverse population samples.

2. **Contribution of proposed activity to theory development/measurement enhancement (3-5 sentences):**

To date, the environmental arena has been hampered by a lack of standardized assessment tools that accurately capture different environmental domains that may influence daily activity levels, as well as serve as potential targets for intervention. This is changing with the recent development of a psychometrically sound perceived environment instrument by Dr. Jim Sallis and colleague at SDSU. This second-generation instrument represents the current ‘state-of-the-art’ in evaluating aspects of the individual’s environment that may encourage or hamper regular physical activity. Thus far, the data that Dr. Sallis has collected with this instrument in several samples are promising. The next step in this area of research is to assess the relationships between the different environmental domains assessed via this paper-and-pencil instrument and physical activity levels (as well as, potentially, other health behaviors) in a much broader and more diverse range of population groups.

From a theoretical perspective, although the most prominent behavior change theories used in health behavior research (e.g., social cognitive theory) emphasize the importance of evaluating and understanding the environmental factors that may influence individuals’ decisions to become or remain physically active, in practice, few researchers have attempted to thoroughly evaluate or understand these environmental factors. The currently proposed investigation thus provides a useful opportunity for broadening current applications of social cognitive theory and similar perspectives through a more systematic understanding of potential environmental influences.

3. **BCC’s unique position to address this research question (2-3 sentences):**

In order to substantively advance our understanding of the potential role that the environment may play in influencing an individual’s physical activity levels, the systematic collection of environmental information across a diverse range of population groups is currently needed. The BCC is in a unique position to provide such a diverse range of individuals. Given the current dearth of information in this field, an important next step in advancing the field concerns the collection of cross-sectional data evaluating the link between individual’s physical environments and their current physical activity levels.

The cross-sectional nature of the primary questions to be addressed and the fact that the environment domains to be assessed are considered to be stable aspects of an individual’s environment make the data collection for this proposed study relatively simple.

Specific research question (3-5 sentences):

1. What is the relationship between different perceived environmental domains and current physical activity levels across a range of population samples? These domains include types of residences in one's neighborhood, locations of and access to stores and other facilities in one's neighborhood, the local street/walking environment, including presence of infrastructure for walking (e.g., sidewalks), neighborhood surroundings (e.g., trees, hills), neighborhood safety, the home and work-related physical activity environments, and a brief neighborhood social cohesion scale.
2. What are potential moderators of the perceived environment/physical activity relationship? (e.g., gender, age, ethnicity, marital status or household size, employment status, health status).
3. Other potential secondary questions of interest include: relationships of these perceived environmental domains to other current health behaviors; the potential impact of these environmental factors as moderators of subsequent physical activity changes; and the relationship of the perceived environmental factors to other potentially important outcomes of interest, such as health-related quality of life.

Sites:

Thus far, BCC sites that have expressed potential interest, in addition to Stanford, are Harvard, University of Maryland, Rush-Presbyterian, and URI. Dr. Coday's Memphis group is currently collecting two of the environmental domain scales as part of their trial (i.e., the home environment and neighborhood surroundings scales), and thus could also be included for that portion of the data analysis.

Data:

I have conferred with Dr. Sallis, and he and I are in agreement that a substantive contribution to the physical activity literature can be made through analysis of cross-sectional data. In addition, because of the stable attributes of the environmental domains being assessed, it is permissible for sites to collect these data at the most convenient time(s) for them throughout their study. (For example, the Stanford site is currently collecting these data at baseline for those participants initially entering the trial, and between 6 and 12 months for participants already enrolled in the trial). Many of the sites who have expressed interest in this study have overlapping physical activity measures, which should expedite data analysis and interpretation.

Timeframe:

As noted above, the collection of the environmental paper-and-pencil survey (which takes approximately 20 minutes to complete) could begin immediately on all or a subsample of participants enrolled in any of the BCC studies in which physical activity behavior is also being collected.

Analysis plans:

The analytical approach could include both intra- and inter-study analysis based on linear regression models and similar approaches. To expedite data cleaning and analyses, a central data analyst, located at Stanford, is recommended (i.e., Dr. David Ahn, who currently serves as the statistician/programmer for the Stanford CHAT project). Dr. Lisa Klesges received, along with other members of the BCC physical activity committee, an initial e-mail briefly describing the study concept. We are happy to work with the data analysis and methods group as appropriate.

Estimated Resources:

Total Estimated budget (direct costs) (5/1/02 – 4/30/03):
Approximately \$45,000.

Team Leader/Team members:

The team leaders will be Drs. Abby King and Cynthia Castro at Stanford (email addresses: king@stanford.edu and cynthia.castro@stanford.edu, respectively). We propose that each participating site identify one person who will serve as the team member from their site.